

APPLICATION UNDER UNITED STATES PATENT LAWS

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Invention: RECEPTION APPARATUS AND METHOD

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This is a:

- ☐ Provisional Application
- ☒ Regular Utility Application
- ☐ Continuing Application
 - ☐ The contents of the parent are incorporated by reference
- ☐ PCT National Phase Application
- ☐ Design Application
- ☐ Reissue Application
- ☐ Plant Application
- ☐ Substitute Specification
 - Sub. Spec Filed _____
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 - Sub. Spec. filed _____
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SPECIFICATION

TITLE OF THE INVENTION

RECEPTION APPARATUS AND METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is based upon and claims the
5 benefit of priority from the prior Japanese Patent
Application No. 2003-024860, filed January 31, 2003,
the entire contents of which are incorporated herein by
reference.

BACKGROUND OF THE INVENTION

10 1. Field of the Invention

The present invention relates to a reception
apparatus and method for receiving, for example, a TV
broadcast and so on and, in particular, to an
improvement in a function of receiving any scheduled
15 broadcast program on a reserved form.

2. Description of the Related Art

As well known in the art, the above-mentioned
reception apparatus has the so-called reservation
reception function under which the reservation
20 information relating to broadcasting channels, their
days (week days), their start/end times, and so on, of
those scheduled broadcasting programs are initially set
to a receiver and, when any set day is reached, a
corresponding program can be automatically received.

25 In recent times, much more reservation information
can be set to the receiver due to the emergence of a
low-cost and large-capacity memory device. For this

reason, a conflict is liable to occur among a plurality of reserved information such as setting any programs of two or more different channels to the same time zone on the receiver.

5 In the existing receiver, if a conflict occurs between any newly inputted reservation information and the already set reserved information, a warning to that effect is simply informed to the user.

 The informed user has to re-set the reserved
10 information by, while referring to a list of already set reserved information, searching for any non-conflicting channels, time zones, etc., of any program's involved. It becomes cumbersome to input such reservation information.

15 JPN PAT APPLN KOKAI PUBLICATION NO. 2002-160256 discloses the concept of recording not only a record-preserved information for use in its inherent record-reservation but also a cancellation-candidate record-reserved information and, when the inherent
20 record-reserved information is cancelled, performing an automatic record reservation based on the cancellation-candidate record-reserved information.

 JPN PAT APPLN KOKAI PUBLICATION NO. 2002-262189 discloses the concept of, when a starting time of a
25 desirable program is inputted, enabling the user to obtain the start/end time of the program from a list of programs and search for all program information

broadcasted at the start/stop time obtained and display time.

No mention is made, in these KOKAI PUBLICATIONS, of any idea of, if any conflict occurs between a plurality of reserved information, searching for any non-conflicting channels, time zones, etc., and, by doing so, re-setting the reserved information, that is, alleviating any work load on the user.

BRIEF SUMMARY OF THE INVENTION

According to one aspect of the present invention, there is provided a reception apparatus having its reception operation controlled based on initially recorded reserved information comprising: an input section configured to receive reservation information as an input; a recording section configured to record the reservation information inputted by the input section; a deciding section configured to decide whether or not any of those reserved information recorded on the recording section conflicts with the reservation information inputted at the input section; and a display section configured to display a result of decision by the deciding section.

According to one aspect of the present invention, there is provided a reception method for controlling a reception operation based on reserved information which is initially recorded, comprising: inputting reservation information; a step of recording the

inputted reservation information; deciding any of the recorded reserved information conflicting with the inputted reservation information; and displaying any reserved information decided.

5 BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

 The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention, and together with the general description given above and the
10 detailed description of the embodiments given below, serve to explain the principles of the invention.

 FIG. 1 shows one embodiment of the present invention and a block diagram used in explaining a television reception apparatus;

15 FIG. 2 shows a flow chart for explaining a featuring operation of the television reception apparatus of the present embodiment;

 FIG. 3 is a view for explaining one practical form of an image screen displayed in the television
20 reception apparatus of the present invention; and

 FIG. 4 is a view for explaining another form of an image screen displayed in the television reception apparatus of the present embodiment.

 DETAILED DESCRIPTION OF THE INVENTION

25 An embodiment of the present invention will be described below with reference to the accompanying drawing. FIG. 1 shows a TV reception apparatus as

explained in this embodiment. That is, a reference numeral 11 shows a tuner section configured to select a video signal of a desired channel from a received TV broadcasting signal.

5 The video signal selected at the tuner section 11 is supplied to a signal processing section 12 and, after being demodulated, fed to a display section 13 where it is displayed as an image. The video signal which is demodulated at the signal processing section
10 12 is sent to a recording/reproducing section 14 where it is converted to a format for recording.

 The video signal thus converted to the recording format can be selectively recorded on a hard disk drive (HDD) 15 as a built-in recording medium or a removable
15 memory medium 16 removably attached to the television reception apparatus.

 The video signal recorded in the HDD 15 or the video signal recorded on the removable memory medium 16 can be selectively read out by a recording/reproducing
20 section 14 and converted to a format for reproduction. The converted signal is sent to the display section 13 for display.

 The above series of operations are generally controlled by a central processing unit (CPU) 17. That
25 is, the CPU 17 controls each unit/section based on a control program in a memory section 18 so as to reflect operation information from an operation section 19.

The memory section 18 records reserved information which are inputted through the operation section 19.

The CPU 17, referring to information such as times of day and days (week days) measured by a timer 20,

5 controls each unit/section so as to allow the reserved information which are recorded on the memory section 18 to be reflected.

Based on the reserved information, each unit/section has its operation controlled, such as an
10 operation of receiving a TV broadcasting and displaying it on the display section 13, an operation of recording a video signal of a received TV broadcasting onto the HDD 15 or removable memory medium 16, an operation of displaying the video signal which is recorded onto the
15 HDD 15 or removable memory medium 16 on the display section 13, etc.

With reference to a flow chart shown in FIG. 2, the TV reception apparatus thus structured will be explained below in connection with its featuring
20 operations. First, at the start of operation (step S11), the CPU 17 obtains new reservation information which is inputted through the operation section 19 at step S12.

Then, at step S13, the CPU 17 obtains, from a
25 plurality of reserved information already recorded in the memory section 18, one reserved information on the basis of a predetermined sequence. After this, at step

S14, the CPU 17 decides whether or not there exist any conflicts between the inputted reservation information and any reserved information obtained from the memory section 18.

5 If it is decided that there exists a conflict (YES), the CPU 17 records an identifier of the reserved information, or its content, obtained from the memory section 18 onto the memory section 18 at step S15.

10 After step S15 or when it is decided at step S14 that there exists no conflict (NO), the CPU 17 decides whether or not, at step S16, there is any unidentified conflict between the inputted reservation information and those reserved information already recorded on the memory section 18.

15 If YES, the CPU 17 transfers the process to step S13 and obtains reserved information, in the following sequence, from the reserved information recorded on the memory section 18.

20 If NO, the CPU 17 displays all those conflicting reserved information on the display section 13 at step S17 and ends the process (step S18).

25 Here, FIG. 3 shows a practical form of an image screen on the display section 13 at step S17. The contents displayed on the image screen are generally classified into "already reserved", "newly added reservation" and "warning".

Of these, the "already reserved" item represents a

list of the contents of those reserved information
already recorded on the memory section 18 and arranged
based a predetermined sequence. In the "already
reserved" item, identification numbers 01 to 11 are
5 attached as identifiers to the reserved information and
these are automatically added, under the control of the
CPU 17, in such a state in which the reserved
information are stored in the memory section 18.

The "newly added reservation" item represents the
10 content newly added by the user as being reservation
information. The symbol "[++]" on the left side of the
"newly added reservation" information represents the
presence of the "conflict". And the "warning" item
represents the identification number showing that the
15 "newly added reservation" information conflicts with
any of those "already reserved" items prepared as a
list.

According to the embodiment above, if any
reservation information is newly inputted, the user can
20 immediately know what action should be taken against
any particular reserved information since any
conflicting reserved information is displayed out of
the reserved information stored in the memory section
18. It is, therefore, possible for the user to support
25 the re-setting operation of any reserved information.
In this case, any conflicting reserved information can
be displayed by the corresponding identifier and, by

doing so, it is possible to more save a display area than in the case where the content of the corresponding reserved information is displayed.

5 Although, in FIG. 3, the displayed items are represented as being classified under the "already reserved", "newly added reservation" and "warning" items, those conflicting reserved information only, that is, the "warning" information only, may be displayed instead.

10 In FIG. 3, the "warning" item may be deleted from the corresponding display area and, instead, the "already reserved" and "newly added reservation" items may be so displayed that, of a plurality of "already reserved" items, those reserved items conflicting with
15 a "newly added reservation" item can be identified by a different color.

 It is further possible to selectively re-set the reserved information under the "already reserved" and "newly added reservation" items on a display screen in
20 FIG. 3 and, by doing so, to support the re-setting operation of the reserved information more readily. If, in this case, any conflict ceases to exist by the re-setting of the reserved information, a warning sign disappears. If, on the other hand, a new conflict
25 appears by the re-setting operation of the reserved information, the identification number of the corresponding reserved information is displayed on a

"warning" list.

Further, if any conflict occurs between/among the reserved information, the CPU 17 prepares non-conflicting reserved information candidates and displays them. In this case, the user can select any desired candidate on the display screen and this further supports the re-setting operation of the reserved information.

If the reserved information is to be re-set, the user can select long-duration periodic items, such as "every day", "every week", "every month", etc., items or temporary periodic items such as "this day only" "this week only" etc., items. By doing so, he or she can avoid the reserved information from being changed due to any temporary conflict.

Further, the user can not only display any conflicting reserved information but also display a time zone set for an "already reserved" information and a time zone for a "newly inputted reservation" information on a parallel diagram table as shown, for example, in FIG. 4. In this case, he or she can recognize any particular conflicting time zone and any particular reservable time zone readily upon comparison. That is, it is possible to further support the re-setting operation of the reserved information by allowing the user to present a condition under which there occurs no conflict with already reserved

information.

For example, a pointing device such as a mouse can be utilized on a display screen shown in FIG. 4 in which case any reservation time zone can be re-set by varying the diagram configuration. It is, therefore, possible to achieve the easiness with which the user can re-set the reserved information.

The present invention is not restricted to the above-mentioned embodiment and various changed or modifications of the constituent elements can be made without departing from the essence of the present invention in any practical stage. Further, the present invention can be embodied by properly combining a plurality of constituent elements disclosed in various forms of invention involved. For example, some constituent elements of the embodiment may be eliminated from all the constituent elements shown in the embodiments.

Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details and representative embodiments shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.